

Amendment and Response

Applicant: Alexander C. Ranous et al.

Serial No.: 09/559,693

Filed: April 27, 2000

Docket No.: 10002147-1

Title: INTERNET USAGE DATA RECORDING SYSTEM AND METHOD EMPLOYING DISTRIBUTED DATA PROCESSING AND DATA STORAGE

REMARKS

The following remarks are made in response to the Office Action mailed July 22, 2004. Claims 1-10, 21-29, 36-43 were rejected. With this Response, claims 1, 8, 9, 21, 29, 36 and 40 have been amended, and claims 6, 7 and 28 have been cancelled. Claims 1-5, 8-10, 21-27, 29 and 36-43 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 102

Claims 1-8, 21-27, 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. US2002/0091811 A1 to Schweitzer et al. (Schweitzer). Applicants submit that independent claims 1, 21, 36 and 40 and the claims depending therefrom are not anticipated by Schweitzer.

Amended Independent claim 1 recites a network usage system having a multiple level distributed data storage system. The system includes a set of first level network data collectors, wherein each first level network data collector receives network accounting data from a network data source, processes and stores the network accounting data at the first level network data collector. A second level network data collector is provided, wherein the second level network data collector receives processed network accounting data from one or more first level data collectors, processes and stores the network accounting data at the second level network data collector. Each first level network data collector includes a first level data storage system and the second level network data collector includes a second level data storage system, for storing process network accounting data. The first level data storage system and the second level data storage system each include a processed data storage location, a meta data storage location and an error recovery information storage location, wherein the processed network accounting data is stored at the process data storage location.

Schweitzer discloses a system, method and computer program product for merging data in a network-based filtering and aggregating platform. The system includes gatherer devices that gather detailed information from various information source devices and convert the information

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into standardized information. The gatherer devices can correlate the gathered information with account information for network transaction accounting. Manager devices manage the gatherer devices and store the gathered standardized information at a central location. See Schweitzer, paragraph 0011.

Schweitzer fails to disclose a network usage system wherein **the first level data storage system and the second level data storage system each include a processed data storage location, a meta data storage location and an error recovery information storage location, wherein the processed network accounting data is stored at the processed data storage location.** In reference to the Office Action, Applicants amended independent claim 1 to include the claim limitations of dependent claims 6 and 7 of Paper No. 10, on page 4, the Examiner supported the rejection of claims 6 and 7 by citing to Schweitzer, paragraphs 0071-0074, 0087.

Paragraph 0071 discloses the gatherers collecting network session data and the possibility of storing the session data in the central database 170 at CEM 170. Schweitzer further discloses the filtering and aggregation of data (paragraphs 0072-0075). Schweitzer discloses that the CEM 170 can be fault-tolerant, that is, it can recover from any system crash. It coordinates the recovery of the system 100 to its previous state. See Schweitzer, paragraph 0087. Schweitzer fails to disclose each first level network data collector including a first level data storage system and the second level network data collector including a second level data storage system, wherein the first level data storage system and the second level data storage system each include a process data storage location, the meta data storage location and an error recovery information storage location as claimed by Applicants. In view of the above, Applicant requests that the above rejection of independent claim 1 under 35 U.S.C. §102 be withdrawn.

Dependent claims 2-5 and 8-10 depend either directly or indirectly upon independent claim 1. Accordingly, Applicant believes these dependent claims also to be allowable over the art of record.

Schweitzer also fails to disclose the method of independent claim 36. Amended independent claim 36 recites a method for recording network usage including storing network data in a multiple level data storage system. The method includes defining a set of first level

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network data collectors. A first set of network usage information is received at each first level network data collector. The first network usage information set is processed and stored at the first level network data collector. A second level network data collector is defined. The first network usage information set is received at the second level network data collector from one or more first level network data collectors. The first network usage information set is processed to produce a second network usage information set. The second network usage information set is stored at the second level network data collector. The first level network data collector is defined to include a query manager, wherein the second level network data collector is in communication with the first level network data collector via the query manager.

Schweitzer fails to disclose a method for recording network usage including storing network data in a multiple level data storage system, including **defining the first level network data collector to include a query manager, wherein the second level network data collector is in communication with the first level network data collector via the query manager.** In Schweitzer, the central event manager (CEM), as referenced by the Examiner, operates to control all the gatherers, instructing them to perform, in a particular sequence, the operations defined in the computation flow. See Schweitzer, paragraphs 0080-0089. The CEM 170 is not a first level network data collector as claimed by Applicants, nor is it a first level network data collector that includes a query manager for communication with the second level network data collector as claimed by Applicants. In view of the above, Applicant requests that the rejection of independent claim 36 under 35 U.S.C. §102 be withdrawn.

Dependent claims 37-39 depend upon independent claim 36. Accordingly, Applicant believes these dependent claims also to be allowable over the art of record.

Amended independent claim 40 recites a network usage system having a multiple level distributed data storage system. The system includes a set of first level network data collectors, wherein each first level network data collector receives network accounting data from a network data source, processes and stores the network accounting data at the first level network data collector. Each network data collector is configured to receive network accounting data including at least one of network usage data comprising the source address, destination address,

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byte or pack accounts and a time stamp, or network session data comprising a source address, a time stamp and a user name. A second level network data collector is provided, wherein the second level network data collector receives processed network accounting data from one or more first level network data collectors, processes and stores the network accounting data at the second level network data collector.

Each first level network data collector includes a first level data storage system and the second level network data collector includes a second level data storage system, for storing processed network accounting data. The first level data storage system and the second level data storage system each include a processed data storage location, a meta data storage location and an error recovery information storage location. The processed network accounting data is stored at the processed data storage location. After storing of the process network accounting data, corresponding meta data is transferred to the meta data storage location and error recovery information is transferred to the error recovery information location. Each first level network data collector includes a query manager. The second level network data collector is in communication with the first level network data collector via the query manager. Each of the first level data storage systems includes a first level aging policy, wherein network accounting data is removed from the first level data storage system after a time period corresponding to the first level aging policy. The second level data storage system includes a second level aging policy different from the first level aging policy, wherein the network accounting data is removed from the second level data storage system after a time period corresponding to the second level aging policy. For the same reasons as stated herein with regard to independent claims 1, 21 and 36, Applicant believes independent claim 40 to be allowable over the art of record. Applicants respectfully request that the above rejection of independent claim 40 under 35 U.S.C. §102(b) be withdrawn.

Dependent claims 41-43 depend upon independent claim 40. Accordingly, Applicant believes these dependent claims also to be allowable over the art of record.

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Claim Rejections under 35 U.S.C. § 103

Claims 9-10, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schweitzer in view of U.S. Patent No. 4,361,877, to Dyer et al. (Dyer).

Applicants have amended independent claim 21 to include the claim limitation of dependent claim 28. Dependent claim 29 has been amended to depend upon independent claims 21. Accordingly, independent claim 21 is discussed herein.

Independent claim 21 recites a method for recording network usage including storing network data in a multiple level data storage system. The method includes defining a set of first level data collectors. A first set of network accounting data is received at each first level network data collector. The first network accounting data set is processed and stored at the first level network data collector. A second level network data collector is defined. The first network accounting data set is received from one or more first level network data collectors. The first network accounting data set is processed to produce a second network accounting data set. The second network accounting data set is stored at the second level network data collector. A first level aging policy is defined for the first level network data collector. The first network accounting data set is removed from the first level network data collector after a time period corresponding to the first level aging policy.

Schweitzer is as discussed above.

Dyer merely discloses a billing recorder with non-volatile solid state memory. The billing recorder is said to provide a record of customer usage of electricity, and includes a controller having a microprocessor for receiving and processing pulses from an electric meter. Data is temporarily stored in random access memory (i.e., volatile memory) by the controller. "The accumulated measurement data and time reference data are transferred to a non-volatile, solid state memory at the end of relatively long collection periods which comprise a number of demand intervals." (See Dyer, Abstract).

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The Examiner concedes that Schweitzer does not disclose a first level data storage system including a first level aging policy wherein network accounting data is removed from the first level data storage system after a time period corresponding to the first level aging policy. The Examiner states "However, in a analogous art, Dyer discloses removing data after it has been stored for a predetermined period of time."

Dyer merely discloses moving accumulated measurement data from volatile memory to nonvolatile memory at the end of a relatively long collection period in the electricity-billing recorder. Dyer also fails to disclose removing the first network accounting data set from the first level network data collector after a time period corresponding to the first level aging policy in a multiple level data storage system. In view of the above, one of ordinary skill in the art could not combine the teachings of Schweitzer in view of Dyer and arrive at the present invention of independent claim 21. Accordingly, Applicants request that the above rejection of independent claim 21 (claim 28) under 35 U.S.C. §103(a) be withdrawn.

Dependent claims 9 and 10 depend upon amended independent claim 1, which as indicated above, Applicants believe to be in allowable form. Further, for the same reasons as stated above in reference to independent claim 21, Applicants believe dependent claims 9 and 10 to further distinguish over the art of record. Allowance of these claims is also requested.

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DATA PROCESSING AND DATA STORAGE**CONCLUSION**

In view of the above, Applicant respectfully submits that pending claims 1-5, 8-10, 21-27, 29 and 36-43 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-5, 8-10, 21-27, 29 and 36-43 is respectfully requested.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either Philip S. Lyren at Telephone No. (281) 514-8236, Facsimile No. (281) 514-8332 or Steven E. Dicke at Telephone No. (612) 573-2002, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703) 872-9306 on this 19 day of October, 2004.

By Steven E. Dicke
Name: Steven E. Dicke